

ISIS-II PL/M-86 V2.0 COMPILATION OF MODULE FILE

OBJECT MODULE PLACED IN FILES.OBJ

COMPILER INVOKED BY: :F0: FILES.PL/M DEBUG OPTIMIZE(2) DATE(FEBRUARY 2, 1982) XREF

```

1      $title('FILE AND I/O MODULE')
      file:
      do;

/*

      modified 3/26/81 R. Silberstein
      modified 3/28/81 R. Silberstein
      modified 3/30/81 R. Silberstein
      modified 4/7/81  R. Silberstein
      modified 4/16/81 R. Silberstein
      modified 6/16/81 R. Silberstein
      modified 7/14/81 R. Silberstein

```

\*/

/\*

This is the modules to perform BYTE i/o to  
the following 5 logical devices:

```

      source - file
      include - file
      hex    - file
      symbol - file
      print  - file

```

Each of the logical files may be assigned to the  
following physical devices :

```

      null      (not legal for source and include file)
      console
      printer   (not legal for source and include file)
      disk

```

The module defines the following set  
of public subroutines:

```

INSOURCEBYTE      - read 1 byte from source file
ININCLUDEBYTE     - read 1 byte from include file
OUTHEXBYTE (ch)    - write 1 byte to hex file
OUTSYMBOLBYTE (ch) - write 1 byte to symbol file
OUTPRINTBYTE (ch)  - write 1 byte to print file

```

```

OPENSOURCE        - open source file
OPENINCLUDE       - open include file
OPENHEX           - open hex file
OPENSYMBOL        - open symbol file
OPENPRINT         - open print file
REWINDSOURCE      - rewind source file

```

```

CLOSESOURCE      - close source file

```

CP/M-86 v.1.1 (Vol. IV)

COPYRIGHT © 1981, 1982

DIGITAL RESEARCH

P. O. B. X 579

PACIFIC GROVE, CA 93950

SER. # C81-162

|              |                      |
|--------------|----------------------|
| CLOSEINCLUDE | - close include file |
| CLOSEHEX     | - close hex file     |
| CLOSESYMBOL  | - close symbol file  |
| CLOSEPRINT   | - close print file   |

In addition, 2 subroutines to set up the correct file names and routing to correct physical device are included. These are:

FILESETUP  
I\$FILESETUP

The 'filesetup' routine sets up the source, hex, symbol and print files by scanning the user command tail of the program activating line. The format of the command line is described in the program format section of the user's manual. The routine also initiates the global string array 'SOURCENAME' with the source file name, this array to be used later by the printout module.

The 'ifilesetup' sets up the format of the include file given by the INCLUDE command of the assembler.

\*/

```

#include (:f1:macro.lit)
= $nolist
#include (:f1:struc.lit)
= $nolist
#include (:f1:dev.lit)
= $nolist
#include (:f1:io.ext)
= $nolist
#include (:f1:subr1.ext)
= $nolist
#include (:f1:subr2.ext)
= $nolist
#include (:f1:TEXT.EXT)
= $nolist
#include (:f1:global.ext)
= $nolist

```

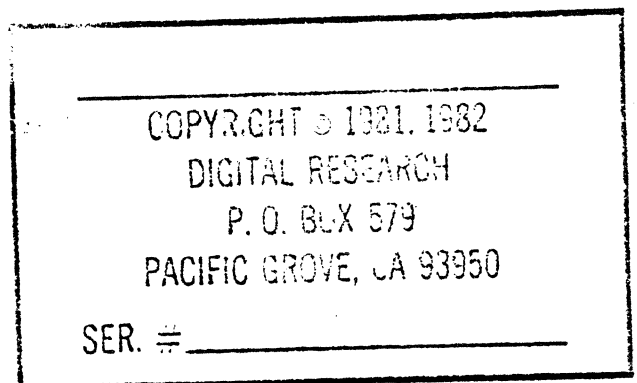
```

109 1 dcl
      diskunit          byte,

      nulltype          lit    '0',    /* subroutine 'devicetype' */
      consoletype       lit    '1',
      printertype       lit    '2',
      disktype          lit    '3',

      dr                lit    '0',    /* drive code in fcb block */
      fn                lit    '1',    /* filename in fcb block */
      ft                lit    '9',    /* filetype in fcb block */
      ex                lit    '12',   /* file extension number */
      s2                lit    '14',
      nr                lit    '32',   /* file record number */
      dollar            lit    '""$',

```



```

asmdefault(3)  byte data ('AS6'), /* different file types */
hexdefault(3)  byte data ('H86'),
lstdefault(3)  byte data ('LST'),
symdefault(3)  byte data ('SYM'),

sourcefile     file%i$structure,
includefile    file%i$structure,
hexfile        file%i$structure,
printfile      file%i$structure,
symbolfile     file%i$structure;

110  1  clearfcb: proc(fcbpt,defaultpt);
111  2      dcl
              (fcbpt,defaultpt) addr,
              dest based fcbpt (1) byte;
112  2      CALL FILL (0, 33, FCBPT);
113  2      CALL FILL (' ', 8, FCBPT+FN);
114  2      call copy(3,defaultpt,.dest(ft));
115  2  end clearfcb;

116  1  clearcontrol: procedure(point,defaultptr);
117  2      dcl (point,defaultptr) addr,
              x based point file%i$structure;
118  2      call clearfcb(.x.fcbblock,defaultptr);
119  2      x.disk=diskunit;
120  2  end clearcontrol;

121  1  devicetype: proc(ch) byte;
122  2      dcl ch byte;
123  2      if ch=null then return nulltype;
125  2      if ch=console then return consoletype;
127  2      if ch=printer then return printertype;
129  2      return disktype;
130  2  end devicetype;

131  1  disk$select: procedure(disk);
132  2      dcl disk byte;
133  2      if diskunit <> disk then$do
135  3          diskunit=disk;
136  3          call select$disk(diskunit);
137  3      end$if;
138  2  end disk$select;

139  1  inbyte: proc (ptr) byte;
140  2      dcl ptr addr,
              x based ptr file%i$structure,
              ch byte,
              i addr;

141  2      i=x.bufptr;
142  2      if i=length(x.buffer) then$do
144  3          i=0;
145  3          call disk$select(x.disk);
146  3          do while i < length(x.buffer);
147  4              call SET$DMA$ADDRESS (.x.buffer(i));
148  4              IF (CH := READ$RECORD (.X.FCBBLOCK)) <> 0 THEN$DO

```

COPYRIGHT © 1981, 1982

DIGITAL RESEARCH

P. O. BOX 579

PACIFIC GROVE, CA 93950

SER. # \_\_\_\_\_

```

150 5      IF CH = 1 THEN$DO
152 6          X.BUFFER (I) = END$OF$FILE;
153 6          I = LENGTH (X.BUFFER);
154 6      ELSE$DO
156 6          CALL FILE$ABORT (.X, .DISKREADERRTEXT);
157 6      END$IF;
158 5      .else$do
160 5          i=i+128;
161 5      end$if;
162 4      end$while;
163 3      i=0;
164 3      end$if;
165 2      ch=x.buffer(i);
166 2      x.bufptr=i+1;
167 2      return ch;
168 2  end inbyte;

169 1  FLUSHBUFFER: PROCEDURE (PTR);
170 2      DECLARE (PTR, I) ADDRESS, X BASED PTR FILE$0$STRUCTURE;

171 2      call disk$select(x.disk);
172 2      i=0;
173 2      do while i < x.bufptr;
174 3          call SET$DMA$ADDRESS (.x.buffer(i));
175 3          IF WRITE$RECORD (.X.FCB$BLOCK) > 0 THEN
176 3              CALL FILE$ABORT (.X, .DISKWRITEERRTXT);
177 3              i=i+128;
178 3          end$while;
179 2  END FLUSHBUFFER;

180 1  outbyte: proc(ch,ptr);
181 2      dcl ch byte,
          ptr addr,
          x based ptr file$0$structure,
          i addr;

182 2      do case devicetype(x.disk);

          /* null */
183 3      do; end;          /* do nothing */

          /* console */
185 3      call write$console(ch);

          /* printer */
186 3      call write$list(ch);

          /* disk file */
187 3      do;
188 4          i=x.bufptr;
189 4          if i=length(x.buffer) then$do
191 5              CALL FLUSHBUFFER (PTR);
192 5              i=0;
193 5          end$if;
194 4          x.buffer(i)=ch;
195 4          x.bufptr=i+1;
196 4      end;

```

COPYRIGHT © 1981, 1982  
 DIGITAL RESEARCH  
 P. O. BOX 579  
 PACIFIC GROVE, CA 93950

SER. # \_\_\_\_\_

```
177 3      end$case;
198 2      end outbyte;

199 1      open$input: proc (ptr);
200 2          dcl ptr addr,
              x based ptr file$i$structure;

201 2          x.bufptr=length(x.buffer);
202 2          call disk$select(x.disk);
203 2          IF LOW (VERSION) >= 30H THEN$DO
205 3              IF OPEN$RO$FILE (.X.FCBBLOCK) <> OFFH THEN RETURN;
              ELSE$DO
209 3                  IF OPEN$FILE (.X.FCBBLOCK) <> OFFH THEN RETURN;
                  END$IF;
212 2              CALL FILEABORT (.X, .OPENERRTEXT);
213 2          end open$input;

214 1      open$output: proc(ptr);
215 2          dcl ptr addr,
              x based ptr file$o$structure;

216 2          if devicetype(x.disk)=disktype then$do
218 3              x.bufptr=0;
219 3              call disk$select(x.disk);
220 3              CALL delete$file(.x.fcbblock);
221 3              if create$file(.x.fcbblock) = Offh then
222 3                  CALL FILEABORT (.X, .MAKEERRTEXT);
              end$if;
224 2          end open$output;

225 1      outputclose: proc(ptr);
226 2          dcl ptr addr,
              x based ptr file$o$structure;

227 2          if devicetype(x.disk)=disktype then$do
229 3              call outbyte(end$of$file,.x);
230 3              CALL FLUSHBUFFER (PTR);
231 3              IF CLOSE$FILE (.X.FCBBLOCK) = OFFH THEN
232 3                  CALL FILEABORT (.X, .CLOSEERRTEXT);
              end$if;
234 2          end outputclose;

235 1      INPUT$CLOSE: PROCEDURE (PTR);
236 2          DECLARE PTR ADDRESS, X BASED PTR FILE$I$STRUCTURE;
237 2          CALL DISK$SELECT (X.DISK);
238 2          CALL SET$DMA$ADDRESS (.X.BUFFER);
239 2          IF CLOSE$FILE (.X.FCBBLOCK) THEN;
241 2      END INPUT$CLOSE;

242 1      outhexbyte: proc(ch) public;
243 2          dcl ch byte;
244 2          call outbyte(ch,.hex$file);
245 2      end outhexbyte;

246 1      outprintbyte: proc(ch) public;
247 2          dcl ch byte;
248 2          if print$file.disk=console then$do
```

COPYRIGHT © 1981, 1982

DIGITAL RESEARCH

P. O. BOX 579

PACIFIC GROVE, CA 93950

SER. # \_\_\_\_\_

```
250 3      call write$console(ch);
251 3      else$do
253 3          if error$printed then call write$console(ch);
255 3          call outbyte(ch,.printfile);
256 3      end$if;
257 2      end outprintbyte;

258 1      outsymbolbyte: proc(ch) public;
259 2          dcl ch byte;
260 2          call outbyte(ch,.symbolfile);
261 2      end outsymbolbyte;

262 1      insourcebyte: proc byte public;
263 2          return inbyte(.sourcefile);
264 2      end insourcebyte;

265 1      inincludebyte: proc byte public;
266 2          return inbyte(.includefile);
267 2      end inincludebyte;

268 1      opensource: proc public;
269 2          CALL open$input(.sourcefile);
270 2      end opensource;

271 1      openinclude: proc public;
272 2          CALL open$input(.includefile);
273 2      end openinclude;

274 1      openhex: proc public;
275 2          CALL open$output(.hexfile);
276 2      end openhex;

277 1      openprint: proc public;
278 2          CALL open$output(.printfile);
279 2      end openprint;

280 1      opensymbol: proc public;
281 2          CALL open$output(.symbolfile);
282 2      end opensymbol;

283 1      close$source: proc public;
284 2          call input$close (.source$file);
285 2      end close$source;

286 1      rewindsource: proc public;
287 2          sourcefile.fcblock(nr)=0;
288 2          sourcefile.bufptr=length(sourcefile.buffer);
289 2          if sourcefile.fcblock(ex) <> 0 then$do
291 3              sourcefile.fcblock(ex)=0;
292 3              sourcefile.fcblock(s2)=0;
293 3              CALL opensource;
294 3          end$if;
295 2      end rewindsource;

296 1      close$include: proc public;
297 2          call input$close (.include$file);
298 2      end close$include;
```

COPYRIGHT © 1981, 1982

DIGITAL RESEARCH

P. O. BOX 579

PACIFIC GROVE, CA 93950

SER. # \_\_\_\_\_

```

297 1  closehex: proc public;
300 2      call outputclose(.hexfile);
301 2  end closehex;

302 1  closeprint: proc public;
303 2      call outputclose(.printfile);
304 2  end closeprint;

305 1  closesymbol: proc public;
306 2      call outputclose(.symbolfile);
307 2  end closesymbol;

308 1  i$file$setup: proc(dev,filnam,filtyp) public;
309 2      dcl dev byte,(filnam,filtyp) addr;
310 2      call clearcontrol(.includefile,filtyp);
311 2      includefile.disk=dev;
312 2      call copy(8,filnam,.includefile.fcbblock(fn));
313 2  end i$file$setup;

```

```

314 1  filessetup:      proc      byte public;
315 2      dcl

```

```

      ch          byte,      /* pick up character */
      i           byte,      /* counter */
      noleft      byte,      /* no of characters left in tbuff */
      bpt         byte,      /* index of tbuff */
      exitvalue   byte,      /* exitvalue of subroutine */
      flag        byte;      /* program logic flag */

```

```

316 2  nextch: proc byte;
317 3      if noleft > 0 then$do
319 4          ch=tbuff(bpt);
320 4          noleft=noleft-1;
321 4          bpt=bpt+1;
322 4      else$do
324 4          ch=cr;
325 4      end$if;
326 3      return ch;
327 3  end nextch;

328 2  getdisk: procedure (p);
329 3      declare p address, dsk based p byte;
330 3      ch=upper(nextch); /* test selected disk drive */
331 3      if letter(ch) then$do
333 4          dsk=ch-'A';
334 4          if dsk > validdisk then
335 4              if dsk < console then
336 4                  exitvalue = false; /* invalid drive */
337 4              else$do
339 4                  exitvalue=false;
340 4                  noleft=0;
341 4              end$if;
342 3      end getdisk;

343 2  exitvalue=true;

```

COPYRIGHT © 1981, 1982

DIGITAL RESEARCH

P. O. BOX 579

PACIFIC GROVE, CA 93950

SER. # \_\_\_\_\_

```

                                /* save current disk */
344 2    default$drive,diskunit:=interrogate$disk;
                                /* enter user selected disk */
345 2    if fcb(dr) < 0 then$do
347 3        call selectdisk(diskunit:=fcb(dr)-1);
348 3    end$if;

                                /* clear control blocks */
349 2    call clearcontrol(.sourcefile,.asmdf ilt);
350 2    call clearcontrol(.hexfile,.hexdefault);
351 2    call clearcontrol(.printfile,.lstdefault);
352 2    call clearcontrol(.symbolfile,.symdefault);
353 2    call copy(8,.fcb(fn),.sourcefile.fcbblock(fn));
354 2    call copy(8,.fcb(fn),.hexfile.fcbblock(fn));
355 2    call copy(8,.fcb(fn),.printfile.fcbblock(fn));
356 2    call copy(8,.fcb(fn),.symbolfile.fcbblock(fn));

357 2    if FCB (FT) < SPACE then$do    /* pick up specified source file type */
359 3        call copy(3,.fcb(ft),.sourcefile.fcbblock(ft));
360 3    end$if;

/* Move source file name to SOURCENAME */

361 2    CALL FILL (SPACE, LENGTH (SOURCENAME), .SOURCENAME);
362 2    i=0;
363 2    do while i<8 and (sourcename(i):=.sourcefile.fcbblock(fn+i)) < space;
364 3        i=i+1;
365 3    end$while;
366 2    sourcename(i)='.';
367 2    i=i+1;
368 2    call copy(3,.sourcefile.fcbblock(ft),.sourcename(i));

/* Test if file parameters */

369 2    noleft:=tbuff(0);
370 2    bpt=1;
371 2    FLAG = FALSE;
372 2    IF FCB16 (1) < SPACE THEN$DO
374 3        IF FCB16 (1) < DOLLAR THEN$DO
376 4            EXITVALUE = FALSE;
377 4        ELSE$DO
379 4            DO WHILE (NOLEFT > 0) AND (NEXTCH < DOLLAR);
380 5                END$WHILE;
381 4            FLAG = TRUE;
382 4        END$IF;
383 3    END$IF;

384 2    if flag then$do

        /* file parameters present - pick them up */

386 3        do while noleft > 0;
387 4            if (ch:=upper(nextch)) < space then$do

                /* A-parameter */
389 5                IF CH = 'A' THEN call getdsk(.sourcefile.disk);

```

COPYRIGHT © 1981, 1982  
 DIGITAL RESEARCH  
 P. O. BOX 570  
 PACIFIC GROVE, CA 93950  
 SER. # \_\_\_\_\_



## PL/M-86 COMPILER FILE AND I/O MODULE

```

391 5      /* H-parameter */
          ELSE IF CH = 'H' THEN call getdsk(.hexfile.disk);

393 5      /* P-parameter */
          ELSE IF CH = 'P' THEN call getdsk(.printfile.disk);

395 5      /* S-parameter */
          ELSE IF CH = 'S' THEN call getdsk(.symbolfile.disk);

397 5      /* F-parameter */
          ELSE IF CH = 'F' THEN$DO
399 6          if (ch:=upper(nextch)) = 'I' then$do
401 7              intel$hex$on=true;
402 7          elseif$do
404 7              if ch= 'D' then$do
406 8                  intel$hex$on=false;
407 8              elseif$do
409 8                  exitvalue=false;
410 8                  noleft=0;
411 8              endif;
412 7          endif;
413 6      END$IF;

          /* error, no legal parameter */
          ELSE
414 5              $DO;
415 6              exitvalue=false;
416 6              noleft=0;
417 6              END$DO;

418 5          end$if;
          end$while;
420 3      end$if;

          printdevice=printfile.disk; /* set global printdevice flag */
          SYMBOLDEVICE = SYMBOLFILE.DISK;
          INCLUDE$DEFAULT = SOURCEFILE.DISK;

          /* input must be from a disk file */

424 2      if devicetype(sourcefile.disk) <> disktype then$do
426 3          exitvalue=false;
427 3      end$if;

428 2      return exitvalue;

429 2      end filessetup;

430 1      end file;

```

COPYRIGHT © 1981, 1982  
 DIGITAL RESEARCH  
 P. O. BOX 579  
 PACIFIC GROVE, LA 93950

SER. # \_\_\_\_\_

## CROSS-REFERENCE LISTING

| DEFN | ADDR  | SIZE | NAME, ATTRIBUTES, AND REFERENCES                                                                         |
|------|-------|------|----------------------------------------------------------------------------------------------------------|
| 106  | 0000H | 4    | ABSADDR. . . . . BYTE ARRAY(4) EXTERNAL(87)                                                              |
| 106  | 0000H | 1    | ACCLEN . . . . . BYTE EXTERNAL(91)                                                                       |
| 106  | 0000H | 1    | ACCLNSAVE . . . . . BYTE EXTERNAL(94)                                                                    |
| 106  | 0000H | 80   | ACCUK. . . . . BYTE ARRAY(80) EXTERNAL(92)                                                               |
| 106  | 0000H | 80   | ACCUKSAVE. . . . . BYTE ARRAY(80) EXTERNAL(93)                                                           |
| 2    |       |      | ADDR . . . . . LITERALLY 61 64 67 70 76 94 97 100 103 106 109<br>111 117 140 170 181 200 215 226 236 309 |
| 84   | 0000H |      | ALPHANUMERIC . . . . . PROCEDURE BYTE EXTERNAL(31) STACK=0000H                                           |
| 87   | 0000H |      | ASCIICHAR. . . . . PROCEDURE BYTE EXTERNAL(32) STACK=0000H                                               |
| 105  | 0000H | 1    | ASMB&TEXT. . . . . BYTE ARRAY(1) EXTERNAL(44)                                                            |
| 109  | 0000H | 3    | ASMBDEFAULT . . . . . BYTE ARRAY(3) DATA 349                                                             |
| 106  | 0008H | 1    | BASEINDEX. . . . . BYTE MEMBER(CURRENTSYMBOL)                                                            |
| 106  | 0008H | 1    | BASEINDEX. . . . . BYTE MEMBER(OPERANDS)                                                                 |
| 3    |       |      | BASEREBBIT . . . . . LITERALLY                                                                           |
| 3    |       |      | BASEREGCOUNT . . . . . LITERALLY                                                                         |
| 315  | 0EBFH | 1    | BPT. . . . . BYTE 319 321 370                                                                            |
| 3    |       |      | BREGBIT. . . . . LITERALLY                                                                               |
| 3    |       |      | BREGCOUNT. . . . . LITERALLY                                                                             |
| 170  | 0024H | 512  | BUFFER . . . . . BYTE ARRAY(512) MEMBER(X) 174                                                           |
| 236  | 0024H | 1024 | BUFFER . . . . . BYTE ARRAY(1024) MEMBER(X) 238                                                          |
| 109  | 0024H | 512  | BUFFER . . . . . BYTE ARRAY(512) MEMBER(SYMBOLFILE)                                                      |
| 226  | 0024H | 512  | BUFFER . . . . . BYTE ARRAY(512) MEMBER(X)                                                               |
| 140  | 0024H | 1024 | BUFFER . . . . . BYTE ARRAY(1024) MEMBER(X) 142 146 147 152 153 165                                      |
| 109  | 0024H | 512  | BUFFER . . . . . BYTE ARRAY(512) MEMBER(PRINTFILE)                                                       |
| 200  | 0024H | 1024 | BUFFER . . . . . BYTE ARRAY(1024) MEMBER(X) 201                                                          |
| 215  | 0024H | 512  | BUFFER . . . . . BYTE ARRAY(512) MEMBER(X)                                                               |
| 109  | 0024H | 1024 | BUFFER . . . . . BYTE ARRAY(1024) MEMBER(INCLUDEFILE)                                                    |
| 117  | 0024H | 512  | BUFFER . . . . . BYTE ARRAY(512) MEMBER(X)                                                               |
| 109  | 0024H | 1024 | BUFFER . . . . . BYTE ARRAY(1024) MEMBER(SOURCEFILE) 288                                                 |
| 109  | 0024H | 512  | BUFFER . . . . . BYTE ARRAY(512) MEMBER(HEXFILE)                                                         |
| 181  | 0024H | 512  | BUFFER . . . . . BYTE ARRAY(512) MEMBER(X) 189 194                                                       |
| 109  | 0022H | 2    | BUFPTR . . . . . WORD MEMBER(INCLUDEFILE)                                                                |
| 109  | 0022H | 2    | BUFPTR . . . . . WORD MEMBER(PRINTFILE)                                                                  |
| 226  | 0022H | 2    | BUFPTR . . . . . WORD MEMBER(X)                                                                          |
| 140  | 0022H | 2    | BUFPTR . . . . . WORD MEMBER(X) 141 166                                                                  |
| 170  | 0022H | 2    | BUFPTR . . . . . WORD MEMBER(X) 173                                                                      |
| 109  | 0022H | 2    | BUFPTR . . . . . WORD MEMBER(HEXFILE)                                                                    |
| 215  | 0022H | 2    | BUFPTR . . . . . WORD MEMBER(X) 218                                                                      |
| 109  | 0022H | 2    | BUFPTR . . . . . WORD MEMBER(SYMBOLFILE)                                                                 |
| 117  | 0022H | 2    | BUFPTR . . . . . WORD MEMBER(X)                                                                          |
| 181  | 0022H | 2    | BUFPTR . . . . . WORD MEMBER(X) 188 195                                                                  |
| 109  | 0022H | 2    | BUFPTR . . . . . WORD MEMBER(SOURCEFILE) 288                                                             |
| 236  | 0022H | 2    | BUFPTR . . . . . WORD MEMBER(X)                                                                          |
| 200  | 0022H | 2    | BUFPTR . . . . . WORD MEMBER(X) 201                                                                      |
| 81   | 0000H | 1    | CH . . . . . BYTE PARAMETER 82                                                                           |
| 315  | 0EBCH | 1    | CH . . . . . BYTE 319 324 326 330 331 333 387 389 391 393 395 397<br>399 404                             |
| 75   | 0000H | 1    | CH . . . . . BYTE PARAMETER 76                                                                           |
| 246  | 0004H | 1    | CH . . . . . BYTE PARAMETER AUTOMATIC 247 250 254 255                                                    |

COPYRIGHT © 1981, 1982

DIGITAL RESEARCH

P. O. BOX 579

PACIFIC GROVE, CA 93950

SER. #

|     |       |    |                      |                                         |     |     |     |             |
|-----|-------|----|----------------------|-----------------------------------------|-----|-----|-----|-------------|
| 180 | 0006H | 1  | CH . . . . .         | BYTE PARAMETER AUTOMATIC                | 181 | 185 | 186 | 194         |
| 90  | 0000H | 1  | CH . . . . .         | BYTE PARAMETER 91                       |     |     |     |             |
| 78  | 0000H | 1  | CH . . . . .         | BYTE PARAMETER 79                       |     |     |     |             |
| 242 | 0004H | 1  | CH . . . . .         | BYTE PARAMETER AUTOMATIC                | 243 | 244 |     |             |
| 140 | 0EBBH | 1  | CH . . . . .         | BYTE 148 150 165 167                    |     |     |     |             |
| 34  | 0000H | 1  | CH . . . . .         | BYTE PARAMETER 35                       |     |     |     |             |
| 121 | 0004H | 1  | CH . . . . .         | BYTE PARAMETER AUTOMATIC                | 122 | 123 | 125 | 127         |
| 238 | 0004H | 1  | CH . . . . .         | BYTE PARAMETER AUTOMATIC                | 259 | 260 |     |             |
| 87  | 0000H | 1  | CH . . . . .         | BYTE PARAMETER 88                       |     |     |     |             |
| 19  | 0000H | 1  | CHAR . . . . .       | BYTE PARAMETER 20                       |     |     |     |             |
| 22  | 0000H | 1  | CHAR . . . . .       | BYTE PARAMETER 23                       |     |     |     |             |
| 106 | 0000H | 2  | CIP . . . . .        | WORD EXTERNAL(56)                       |     |     |     |             |
| 116 | 0031H | 28 | CLEARCONTROL . . .   | PROCEDURE STACK=0016H                   | 310 | 349 | 350 | 351 352     |
| 110 | 0000H | 49 | CLEARFCB . . . . .   | PROCEDURE STACK=000EH                   | 118 |     |     |             |
| 105 | 0000H | 1  | CLOSEERRTEXT . . .   | BYTE ARRAY(1) EXTERNAL(50)              | 232 |     |     |             |
| 38  | 0000H |    | CLOSEFILE . . . . .  | PROCEDURE BYTE EXTERNAL(15) STACK=0000H |     |     | 231 | 239         |
| 299 | 0399H | 12 | CLOSEHEX . . . . .   | PROCEDURE PUBLIC STACK=0020H            |     |     |     |             |
| 296 | 038DH | 12 | CLOSEINCLUDE . . .   | PROCEDURE PUBLIC STACK=0012H            |     |     |     |             |
| 302 | 03A5H | 12 | CLOSEPRINT . . . .   | PROCEDURE PUBLIC STACK=0020H            |     |     |     |             |
| 283 | 0361H | 12 | CLOSESOURCE . . . .  | PROCEDURE PUBLIC STACK=0012H            |     |     |     |             |
| 305 | 03B1H | 12 | CLOSESYMBOL . . . .  | PROCEDURE PUBLIC STACK=0020H            |     |     |     |             |
| 106 | 0000H | 1  | CODEMACROFLAG . . .  | BYTE EXTERNAL(113)                      |     |     |     |             |
| 3   |       |    | CODEMACROHEAD . . .  | LITERALLY                               |     |     |     |             |
| 106 | 0000H | 2  | CODEMACROPTR . . .   | WORD EXTERNAL(108)                      |     |     |     |             |
| 4   |       |    | CONSOLE . . . . .    | LITERALLY 125 248 335                   |     |     |     |             |
| 109 |       |    | CONSOLETYPE . . . .  | LITERALLY 126                           |     |     |     |             |
| 25  | 0000H |    | CONSTAT . . . . .    | PROCEDURE BYTE EXTERNAL(10) STACK=0000H |     |     |     |             |
| 66  | 0000H |    | COPY . . . . .       | PROCEDURE EXTERNAL(25) STACK=0000H      | 114 | 312 | 353 | 354 355 356 |
|     |       |    |                      | 359 368                                 |     |     |     |             |
| 2   |       |    | CR . . . . .         | LITERALLY 324                           |     |     |     |             |
| 50  | 0000H |    | CREATEFILE . . . . . | PROCEDURE BYTE EXTERNAL(19) STACK=0000H | 221 |     |     |             |
| 53  | 0000H |    | CRLF . . . . .       | PROCEDURE EXTERNAL(22) STACK=0000H      |     |     |     |             |
| 106 | 0000H | 2  | CSCIP . . . . .      | WORD EXTERNAL(61)                       |     |     |     |             |
| 103 | 0000H | 1  | CSEGSPEC . . . . .   | BYTE EXTERNAL(59)                       |     |     |     |             |
| 106 | 0000H | 1  | CSECTYPE . . . . .   | BYTE EXTERNAL(57)                       |     |     |     |             |
| 103 | 0000H | 2  | CSEGVVALUE . . . . . | WORD EXTERNAL(58)                       |     |     |     |             |
| 106 | 0000H | 1  | CSPEC . . . . .      | BYTE EXTERNAL(68)                       |     |     |     |             |
| 106 | 0000H | 2  | CURCSEG . . . . .    | WORD EXTERNAL(64)                       |     |     |     |             |
| 106 | 0000H | 2  | CURDSEG . . . . .    | WORD EXTERNAL(65)                       |     |     |     |             |
| 103 | 0000H | 2  | CURESEG . . . . .    | WORD EXTERNAL(67)                       |     |     |     |             |
| 106 | 0000H | 9  | CURRENTSYMBOL . . .  | STRUCTURE EXTERNAL(104)                 |     |     |     |             |
| 103 | 0000H | 2  | CURSSEG . . . . .    | WORD EXTERNAL(66)                       |     |     |     |             |
| 96  | 0000H | 2  | D . . . . .          | WORD PARAMETER 97                       |     |     |     |             |
| 93  | 0000H | 2  | D . . . . .          | WORD PARAMETER 94                       |     |     |     |             |
| 102 | 0000H | 2  | D . . . . .          | WORD PARAMETER 103                      |     |     |     |             |
| 66  | 0000H | 2  | D . . . . .          | WORD PARAMETER 67                       |     |     |     |             |
| 99  | 0000H | 2  | D . . . . .          | WORD PARAMETER 100                      |     |     |     |             |
| 2   |       |    | DCL . . . . .        | LITERALLY                               |     |     |     |             |
| 102 | 0000H |    | DECOUT . . . . .     | PROCEDURE EXTERNAL(37) STACK=0000H      |     |     |     |             |
| 103 | 0000H | 1  | DEFAULTDRIVE . . . . | BYTE EXTERNAL(111) 344                  |     |     |     |             |
| 110 | 0004H | 2  | DEFAULTPT . . . . .  | WORD PARAMETER AUTOMATIC                | 111 | 114 |     |             |
| 116 | 0004H | 2  | DEFAULTPTR . . . . . | WORD PARAMETER AUTOMATIC                | 117 | 118 |     |             |
| 41  | 0000H |    | DELETEFILE . . . . . | PROCEDURE EXTERNAL(16) STACK=0000H      | 220 |     |     |             |
| 103 | 0001H | 1  | DESCR . . . . .      | BYTE MEMBER(TOKEN)                      |     |     |     |             |
| 111 | 0000H | 1  | DEST . . . . .       | BYTE BASED(FCBPT) ARRAY(1)              | 114 |     |     |             |
| 308 | 0008H | 1  | DEV . . . . .        | BYTE PARAMETER AUTOMATIC                | 309 | 311 |     |             |
| 121 | 004DH | 39 | DEVICETYPE . . . . . | PROCEDURE BYTE STACK=0004H              | 182 | 216 | 227 | 424         |

COPYRIGHT © 1981, 1982

DIGITAL RESEARCH

P. O. BOX 579

PACIFIC GROVE, CA 93950

SER. #

|     |       |                       |                                         |                                 |
|-----|-------|-----------------------|-----------------------------------------|---------------------------------|
| 78  | 0000H | DIGIT. . . . .        | PROCEDURE BYTE EXTERNAL(29) STACK=0000H |                                 |
| 109 | 0000H | 1 DISK . . . . .      | BYTE MEMBER(PRINTFILE)                  | 248 394 421                     |
| 140 | 0000H | 1 DISK . . . . .      | BYTE MEMBER(X)                          | 145                             |
| 215 | 0000H | 1 DISK . . . . .      | BYTE MEMBER(X)                          | 216 219                         |
| 109 | 0000H | 1 DISK . . . . .      | BYTE MEMBER(HEXFILE)                    | 392                             |
| 109 | 0000H | 1 DISK . . . . .      | BYTE MEMBER(SOURCEFILE)                 | 390 423 424                     |
| 236 | 0000H | 1 DISK . . . . .      | BYTE MEMBER(X)                          | 237                             |
| 200 | 0000H | 1 DISK . . . . .      | BYTE MEMBER(X)                          | 202                             |
| 109 | 0000H | 1 DISK . . . . .      | BYTE MEMBER(INCLUDEFILE)                | 311                             |
| 181 | 0000H | 1 DISK . . . . .      | BYTE MEMBER(X)                          | 182                             |
| 170 | 0000H | 1 DISK . . . . .      | BYTE MEMBER(X)                          | 171                             |
| 117 | 0000H | 1 DISK . . . . .      | BYTE MEMBER(X)                          | 119                             |
| 226 | 0000H | 1 DISK . . . . .      | BYTE MEMBER(X)                          | 227                             |
| 109 | 0000H | 1 DISK . . . . .      | BYTE MEMBER(SYMBOLFILE)                 | 396 422                         |
| 131 | 0004H | 1 DISK . . . . .      | BYTE PARAMETER AUTOMATIC                | 132 133 135                     |
| 29  | 0000H | 1 DISKNUMBER . . . .  | BYTE PARAMETER                          | 30                              |
| 105 | 0000H | 1 DISKREADERRTEXT. .  | BYTE ARRAY(1) EXTERNAL(47)              | 156                             |
| 131 | 0074H | 23 DISKSELECT . . . . | PROCEDURE STACK=0008H                   | 145 171 202 219 237             |
| 109 |       | DISKTYPE . . . . .    | LITERALLY                               | 129 216 227 424                 |
| 109 | 0EBAH | 1 DISKUNIT . . . . .  | BYTE                                    | 119 133 135 136 344 347         |
| 105 | 0000H | 1 DISKWRITEERRTXT. .  | BYTE ARRAY(1) EXTERNAL(48)              | 176                             |
| 55  | 0000H | 2 DKADDRESS . . . . . | WORD PARAMETER                          | 56                              |
| 109 |       | DOLLAR . . . . .      | LITERALLY                               | 374 379                         |
| 109 |       | DR . . . . .          | LITERALLY                               | 345 347                         |
| 106 | 0000H | 2 DSCIP. . . . .      | WORD EXTERNAL(63)                       |                                 |
| 329 | 0000H | 1 DSK. . . . .        | BYTE BASED(P)                           | 333 334 335                     |
| 106 | 0000H | 1 DSPEC. . . . .      | BYTE EXTERNAL(69)                       |                                 |
| 2   |       | ELSEDO . . . . .      | LITERALLY                               | 206 336                         |
| 14  | 0000H | 2 ENDBUF . . . . .    | WORD EXTERNAL(5)                        |                                 |
| 2   |       | ENDCASE. . . . .      | LITERALLY                               |                                 |
| 2   |       | ENDDO. . . . .        | LITERALLY                               |                                 |
| 2   |       | ENDFOREVER . . . . .  | LITERALLY                               |                                 |
| 2   |       | ENDIF. . . . .        | LITERALLY                               | 210 222 232                     |
| 2   |       | ENDMODULE. . . . .    | LITERALLY                               |                                 |
| 2   |       | ENDOFFILE. . . . .    | LITERALLY                               | 152 229                         |
| 2   |       | ENDPROC. . . . .      | LITERALLY                               |                                 |
| 105 | 0000H | 1 ENDTEXT. . . . .    | BYTE ARRAY(1) EXTERNAL(42)              |                                 |
| 2   |       | ENDWHILE . . . . .    | LITERALLY                               | 418                             |
| 106 | 0000H | 1 EOFSET . . . . .    | BYTE EXTERNAL(95)                       |                                 |
| 93  | 0000H | EQUAL. . . . .        | PROCEDURE BYTE EXTERNAL(34) STACK=0000H |                                 |
| 106 | 0000H | 1 ERRORPRINTED . . .  | BYTE EXTERNAL(98)                       | 253                             |
| 106 | 0000H | 2 ERRORS . . . . .    | WORD EXTERNAL(88)                       |                                 |
| 106 | 0000H | 2 ESCIP. . . . .      | WORD EXTERNAL(60)                       |                                 |
| 106 | 0000H | 1 ESPEC. . . . .      | BYTE EXTERNAL(71)                       |                                 |
| 109 |       | EX . . . . .          | LITERALLY                               | 289 291                         |
| 315 | 0EC0H | 1 EXITVALUE. . . . .  | BYTE                                    | 336 339 343 376 409 415 426 428 |
| 2   |       | FALSE. . . . .        | LITERALLY                               | 336 339 371 376 406 409 415 426 |
| 11  | 0000H | 1 FCB. . . . .        | BYTE ARRAY(1) EXTERNAL(2)               | 345 347 353 354 355 356 357 359 |
| 12  | 0000H | 1 FCB16. . . . .      | BYTE ARRAY(1) EXTERNAL(3)               | 372 374                         |
| 38  | 0000H | 2 FCBADDRESS . . . .  | WORD PARAMETER                          | 39                              |
| 50  | 0000H | 2 FCBADDRESS . . . .  | WORD PARAMETER                          | 51                              |
| 47  | 0000H | 2 FCBADDRESS . . . .  | WORD PARAMETER                          | 48                              |
| 44  | 0000H | 2 FCBADDRESS . . . .  | WORD PARAMETER                          | 45                              |
| 41  | 0000H | 2 FCBADDRESS . . . .  | WORD PARAMETER                          | 42                              |
| 35  | 0000H | 2 FCBADDRESS . . . .  | WORD PARAMETER                          | 36                              |
| 32  | 0000H | 2 FCBADDRESS . . . .  | WORD PARAMETER                          | 33                              |
| 72  | 0000H | 2 FCBADR . . . . .    | WORD PARAMETER                          | 73                              |

COPYRIGHT © 1981, 1982

DIGITAL RESEARCH

P. O. B. X 573

PACIFIC GROVE, CA 93950

SER. #



|           |                           |                                         |                                 |
|-----------|---------------------------|-----------------------------------------|---------------------------------|
| 2         | INIT . . . . .            | LITERALLY                               |                                 |
| 105 0000H | 1 INITIALS . . . . .      | BYTE ARRAY(1) EXTERNAL(40)              |                                 |
| 235 029BH | 35 INPUTCLOSE . . . . .   | PROCEDURE STACK=000EH                   | 284 297                         |
| 262 030BH | 12 INSOURCEBYTE . . . . . | PROCEDURE BYTE PUBLIC STACK=0012H       |                                 |
| 106 0000H | 1 INFELHEXON . . . . .    | BYTE EXTERNAL(96)                       | 401 406                         |
| 53 0000H  | INTERROGATEDISK . . . . . | PROCEDURE BYTE EXTERNAL(20) STACK=0000H | 344                             |
| 3         | IREGBIT . . . . .         | LITERALLY                               |                                 |
| 3         | IREGCOUNT . . . . .       | LITERALLY                               |                                 |
|           | LENGTH . . . . .          | BUILTIN                                 | 142 146 153 189 201 288 361     |
| 106 0000H | 2 LENGTH . . . . .        | WORD MEMBER(OPERANDS)                   |                                 |
| 106 0000H | 2 LENGTH . . . . .        | WORD MEMBER(CURRENTSYMBOL)              |                                 |
| 81 0000H  | LETTER . . . . .          | PROCEDURE BYTE EXTERNAL(30) STACK=0000H | 331                             |
| 2         | LF . . . . .              | LITERALLY                               |                                 |
| 2         | LIT . . . . .             | LITERALLY                               | 2 3 4 109                       |
|           | LOW . . . . .             | BUILTIN                                 | 203                             |
| 109 0006H | 3 LSTDEFAULT . . . . .    | BYTE ARRAY(3) DATA                      | 351                             |
| 103 0000H | 2 MACROPTR . . . . .      | WORD EXTERNAL(100)                      |                                 |
| 105 0000H | 1 MAKEERRTEXT . . . . .   | BYTE ARRAY(1) EXTERNAL(4)               | 222                             |
| 106 0000H | 1 MAXCOL . . . . .        | BYTE EXTERNAL(75)                       |                                 |
| 5 0000H   | MON1 . . . . .            | PROCEDURE EXTERNAL(0) STACK=0000H       |                                 |
| 8 0000H   | MON2 . . . . .            | PROCEDURE BYTE EXTERNAL(1) STACK=0000H  |                                 |
| 96 0000H  | 1 N . . . . .             | BYTE PARAMETER                          | 97                              |
| 102 0000H | 2 N . . . . .             | WORD PARAMETER                          | 103                             |
| 99 0000H  | 2 N . . . . .             | WORD PARAMETER                          | 100                             |
| 93 0000H  | 1 N . . . . .             | BYTE PARAMETER                          | 94                              |
| 75 0000H  | 1 N . . . . .             | BYTE PARAMETER                          | 76                              |
| 66 0000H  | 1 N . . . . .             | BYTE PARAMETER                          | 67                              |
| 63 0000H  | 2 N . . . . .             | WORD PARAMETER                          | 64                              |
| 106 0000H | 1 NEXTCH . . . . .        | BYTE EXTERNAL(90)                       |                                 |
| 316 05E1H | 43 NEXTCH . . . . .       | PROCEDURE BYTE STACK=0002H              | 330 379 387 399                 |
| 105 0000H | 1 NO . . . . .            | BYTE EXTERNAL(39)                       |                                 |
| 106 0000H | 1 NOERROR . . . . .       | BYTE EXTERNAL(97)                       |                                 |
| 315 0EBEH | 1 NOLEFT . . . . .        | BYTE                                    | 317 320 340 369 379 386 410 416 |
| 106 0000H | 1 NOOPER . . . . .        | BYTE EXTERNAL(106)                      |                                 |
| 3         | NOOVCOUNT . . . . .       | LITERALLY                               |                                 |
| 3         | NOOVERRIDEBIT . . . . .   | LITERALLY                               |                                 |
| 109       | NR . . . . .              | LITERALLY                               | 287                             |
| 4         | NULL . . . . .            | LITERALLY                               | 123                             |
| 109       | NULLTYPE . . . . .        | LITERALLY                               | 124                             |
| 106 0006H | 2 OFFSET . . . . .        | WORD MEMBER(OPERANDS)                   |                                 |
| 106 0006H | 2 OFFSET . . . . .        | WORD MEMBER(CURRENTSYMBOL)              |                                 |
| 105 0000H | 1 OPENERTEXT . . . . .    | BYTE ARRAY(1) EXTERNAL(46)              | 212                             |
| 32 0000H  | OPENFILE . . . . .        | PROCEDURE BYTE EXTERNAL(13) STACK=0000H | 209                             |
| 274 033DH | 12 OPENHEX . . . . .      | PROCEDURE PUBLIC STACK=0012H            |                                 |
| 271 0331H | 12 OPENINCLUDE . . . . .  | PROCEDURE PUBLIC STACK=0012H            |                                 |
| 199 01CCH | 71 OPENINPUT . . . . .    | PROCEDURE STACK=000EH                   | 269 272                         |
| 214 0213H | 72 OPENOUTPUT . . . . .   | PROCEDURE STACK=000EH                   | 275 278 281                     |
| 277 0349H | 12 OPENPRINT . . . . .    | PROCEDURE PUBLIC STACK=0012H            |                                 |
| 35 0000H  | OPENPROFILE . . . . .     | PROCEDURE BYTE EXTERNAL(14) STACK=0000H | 205                             |
| 268 0325H | 12 OPENSOURCE . . . . .   | PROCEDURE PUBLIC STACK=0012H            | 293                             |
| 280 0355H | 12 OPENSYMBOL . . . . .   | PROCEDURE PUBLIC STACK=0012H            |                                 |
| 106 0000H | 36 OPERANDS . . . . .     | STRUCTURE ARRAY(4) EXTERNAL(107)        |                                 |
| 3         | OPERANDSTRUC . . . . .    | LITERALLY                               | 106                             |
| 180 0169H | 99 OUTBYTE . . . . .      | PROCEDURE STACK=0016H                   | 229 244 255 260                 |
| 242 02BEH | 17 OUTHEXBYTE . . . . .   | PROCEDURE PUBLIC STACK=001CH            |                                 |
| 246 02CFH | 45 OUTPRINTBYTE . . . . . | PROCEDURE PUBLIC STACK=001CH            |                                 |
| 225 025BH | 64 OUTPUTCLOSE . . . . .  | PROCEDURE STACK=001CH                   | 300 303 306                     |

COPYRIGHT © 1981, 1982

DIGITAL RESEARCH

P. O. BOX 579

PACIFIC GROVE, CA 93950

SER. #

|     |       |      |                    |                                         |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-------|------|--------------------|-----------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| 258 | 02FCH | 17   | OUTSYMBOLBYTE. . . | PROCEDURE PUBLIC STACK=001CH            |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 69  | 0000H |      | OUTTEXT. . . . .   | PROCEDURE EXTERNAL(26) STACK=0000H      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 323 | 0004H | 2    | P. . . . .         | WORD PARAMETER AUTOMATIC                | 329 | 333 | 334 | 335 |     |     |     |     |     |     |     |     |     |     |  |
| 106 | 0000H | 1    | PAGESIZE. . . . .  | BYTE EXTERNAL(81)                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 105 | 0000H | 1    | PAGETEXT. . . . .  | BYTE ARRAY(1) EXTERNAL(41)              |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 105 | 0000H | 1    | PARERRTEXT. . . .  | BYTE ARRAY(1) EXTERNAL(45)              |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 103 | 0000H | 1    | PASS. . . . .      | BYTE EXTERNAL(55)                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 105 | 0000H | 1    | PASS0TEXT. . . . . | BYTE ARRAY(1) EXTERNAL(53)              |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 105 | 0000H | 1    | PASS1TEXT. . . . . | BYTE ARRAY(1) EXTERNAL(54)              |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 116 | 0006H | 2    | POINT. . . . .     | WORD PARAMETER AUTOMATIC                | 117 | 118 | 119 |     |     |     |     |     |     |     |     |     |     |     |  |
| 103 | 0000H | 240  | PREFIX. . . . .    | BYTE ARRAY(240) EXTERNAL(85)            |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 106 | 0000H | 1    | PREFIXPTR. . . . . | BYTE EXTERNAL(86)                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 103 | 0000H | 1    | PRINTDEVICE. . . . | BYTE EXTERNAL(78)                       | 421 |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 4   |       |      | PRINTER. . . . .   | LITERALLY                               | 127 |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 109 |       |      | PRINTERTYPE. . . . | LITERALLY                               | 128 |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 109 | 0A6CH | 548  | PRINFILE. . . . .  | STRUCTURE                               | 248 | 255 | 278 | 303 | 351 | 355 | 394 | 421 |     |     |     |     |     |     |  |
| 103 | 0000H | 1    | PRINTON. . . . .   | BYTE EXTERNAL(72)                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 106 | 0000H | 1    | PRINISWITCHOFF. .  | BYTE EXTERNAL(73)                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 2   |       |      | PROC. . . . .      | LITERALLY                               | 60  | 63  | 84  | 87  | 96  | 99  | 102 | 110 | 121 | 139 | 180 |     |     |     |  |
|     |       |      |                    |                                         | 199 | 214 | 225 | 242 | 246 | 258 | 262 | 265 | 268 | 271 | 274 | 277 | 280 | 283 |  |
|     |       |      |                    |                                         | 286 | 296 | 299 | 302 | 305 | 308 | 314 | 316 |     |     |     |     |     |     |  |
| 75  | 0000H | 2    | PT. . . . .        | WORD PARAMETER                          | 76  |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 235 | 0004H | 2    | PTR. . . . .       | WORD PARAMETER AUTOMATIC                | 236 | 237 | 238 | 239 |     |     |     |     |     |     |     |     |     |     |  |
| 225 | 0004H | 2    | PTR. . . . .       | WORD PARAMETER AUTOMATIC                | 226 | 227 | 229 | 230 | 231 | 232 |     |     |     |     |     |     |     |     |  |
| 214 | 0004H | 2    | PTR. . . . .       | WORD PARAMETER AUTOMATIC                | 215 | 216 | 218 | 219 | 220 | 221 | 222 |     |     |     |     |     |     |     |  |
| 179 | 0004H | 2    | PTR. . . . .       | WORD PARAMETER AUTOMATIC                | 200 | 201 | 202 | 205 | 209 | 212 |     |     |     |     |     |     |     |     |  |
| 180 | 0004H | 2    | PTR. . . . .       | WORD PARAMETER AUTOMATIC                | 181 | 182 | 188 | 191 | 194 | 195 |     |     |     |     |     |     |     |     |  |
| 139 | 0004H | 2    | PTR. . . . .       | WORD PARAMETER AUTOMATIC                | 170 | 171 | 173 | 174 | 175 | 176 |     |     |     |     |     |     |     |     |  |
| 139 | 0004H | 2    | PTR. . . . .       | WORD PARAMETER AUTOMATIC                | 140 | 141 | 145 | 147 | 148 | 152 | 156 | 165 |     |     |     |     |     |     |  |
|     |       |      |                    | 166                                     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 17  | 0000H |      | READCONSOLE. . . . | PROCEDURE BYTE EXTERNAL(7) STACK=0000H  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 44  | 0000H |      | READRECORD. . . .  | PROCEDURE BYTE EXTERNAL(17) STACK=0000H | 148 |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 2   |       |      | REENT. . . . .     | LITERALLY                               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 283 | 036DH | 32   | REWINDSOURCE. . .  | PROCEDURE PUBLIC STACK=0016H            |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 93  | 0000H | 2    | S. . . . .         | WORD PARAMETER                          | 94  |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 66  | 0000H | 2    | S. . . . .         | WORD PARAMETER                          | 87  |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 109 |       |      | S2. . . . .        | LITERALLY                               | 292 |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 106 | 0000H | 12   | SAVESOURCE. . . .  | BYTE ARRAY(12) EXTERNAL(77)             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 3   |       |      | SEGBIT. . . . .    | LITERALLY                               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 3   |       |      | SEGMCOUNT. . . . . | LITERALLY                               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 106 | 0004H | 2    | SEGMENT. . . . .   | WORD MEMBER(OPERANDS)                   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 106 | 0004H | 2    | SEGMENT. . . . .   | WORD MEMBER(CURRENTSYMBOL)              |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 3   |       |      | SEGTYPEBIT. . . .  | LITERALLY                               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 3   |       |      | SEGTYPECOUNT. .    | LITERALLY                               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 29  | 0000H |      | SELECTDISK. . . .  | PROCEDURE EXTERNAL(12) STACK=0000H      | 136 | 347 |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 55  | 0000H |      | SETDMAADDRESS. . . | PROCEDURE EXTERNAL(21) STACK=0000H      | 147 | 174 | 238 |     |     |     |     |     |     |     |     |     |     |     |  |
| 106 | 0003H | 1    | SFLAG. . . . .     | BYTE MEMBER(OPERANDS)                   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 106 | 0003H | 1    | SFLAG. . . . .     | BYTE MEMBER(CURRENTSYMBOL)              |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 106 | 0000H | 1    | SINFORN. . . . .   | BYTE EXTERNAL(82)                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 106 | 0000H | 80   | SOURCEBUF. . . . . | BYTE ARRAY(80) EXTERNAL(83)             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 109 | 0000H | 1060 | SOURCEFILE. . . .  | STRUCTURE                               | 263 | 269 | 284 | 287 | 288 | 289 | 291 | 292 | 349 | 353 | 359 |     |     |     |  |
|     |       |      |                    |                                         | 363 | 368 | 390 | 423 | 424 |     |     |     |     |     |     |     |     |     |  |
| 106 | 0000H | 12   | SOURCENAME. . . .  | BYTE ARRAY(12) EXTERNAL(76)             | 361 | 363 | 366 | 368 |     |     |     |     |     |     |     |     |     |     |  |
| 103 | 0000H | 1    | SOURCEPTR. . . . . | BYTE EXTERNAL(84)                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 2   |       |      | SPACE. . . . .     | LITERALLY                               | 357 | 361 | 363 | 372 | 387 |     |     |     |     |     |     |     |     |     |  |
| 103 | 0000H | 2    | SSCIP. . . . .     | WORD EXTERNAL(62)                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 106 | 0000H | 1    | SSPEC. . . . .     | BYTE EXTERNAL(70)                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |

COPYRIGHT © 1981, 1982

DIGITAL RESEARCH

P. O. BOX 579

PACIFIC GROVE, CA 93950

SER. #

|           |                      |                                         |                                             |
|-----------|----------------------|-----------------------------------------|---------------------------------------------|
| 2         | STRUC. . . . .       | LITERALLY                               | 106 109 117 140 170 181 200 215 226 236     |
| 106 0002H | 1 STYPE. . . . .     | BYTE MEMBER(OPERANDS)                   |                                             |
| 106 0002H | 1 STYPE. . . . .     | BYTE MEMBER(CURRENTSYMBOL)              |                                             |
| 105 0000H | 1 SYMBFULLERRTEXT. . | BYTE ARRAY(1) EXTERNAL(51)              |                                             |
| 106 0000H | 1 SYMBOLDEVICE . . . | BYTE EXTERNAL(79)                       | 422                                         |
| 107 0C90H | 548 SYMBOLFILE . . . | STRUCTURE                               | 260 281 306 352 356 396 422                 |
| 3         | SYMBOLHEAD . . . .   | LITERALLY                               |                                             |
| 3         | SYMBOLSTRUC. . . .   | LITERALLY                               | 106                                         |
| 106 0000H | 2 SYMBTABADR . . . . | WORD EXTERNAL(105)                      |                                             |
| 107 0007H | 3 SYMDEFAULT . . . . | BYTE ARRAY(3) DATA                      | 352                                         |
| 15 0000H  | SYSTEMRESET. . . .   | PROCEDURE EXTERNAL(6) STACK=0000H       |                                             |
| 69 0000H  | 2 T. . . . .         | WORD PARAMETER                          | 70                                          |
| 2         | TAB. . . . .         | LITERALLY                               |                                             |
| 13 0000H  | 1 TBUFF. . . . .     | BYTE ARRAY(1) EXTERNAL(4)               | 319 369                                     |
| 72 0000H  | 2 TEXTADR. . . . .   | WORD PARAMETER                          | 73                                          |
| 2         | THENDO . . . . .     | LITERALLY                               | 133 142 148 150 189 203 216 227 248 289 317 |
|           |                      |                                         | 331 345 357 372 374 384 387 397 399 404 424 |
| 106 0000H | 30 TITLE. . . . .    | BYTE ARRAY(30) EXTERNAL(80)             |                                             |
| 106 0000H | 4 TOKEN. . . . .     | STRUCTURE EXTERNAL(89)                  |                                             |
| 2         | TRUE . . . . .       | LITERALLY                               | 343 381 401                                 |
| 106 0000H | 1 TYPE . . . . .     | BYTE MEMBER(TOKEN)                      |                                             |
| 3         | TYPEBIT. . . . .     | LITERALLY                               |                                             |
| 60 0000H  | TYPECALC . . . . .   | PROCEDURE BYTE EXTERNAL(23) STACK=0000H |                                             |
| 3         | TYPECOUNT. . . . .   | LITERALLY                               |                                             |
| 90 0000H  | UPPER. . . . .       | PROCEDURE BYTE EXTERNAL(33) STACK=0000H | 330 387 399                                 |
| 105 0000H | 1 USBREAKTEXT. . . . | BYTE ARRAY(1) EXTERNAL(52)              |                                             |
| 105 0000H | 1 USEFACTOR. . . . . | BYTE ARRAY(1) EXTERNAL(43)              |                                             |
| 60 0000H  | 2 VAL. . . . .       | WORD PARAMETER                          | 61                                          |
| 4         | VALIDDISK. . . . .   | LITERALLY                               | 334                                         |
| 106 0002H | 2 VALUE. . . . .     | WORD MEMBER(TOKEN)                      |                                             |
| 27 0000H  | VERSION. . . . .     | PROCEDURE WORD EXTERNAL(11) STACK=0000H | 203                                         |
| 63 0000H  | WROTEST. . . . .     | PROCEDURE BYTE EXTERNAL(24) STACK=0000H |                                             |
| 19 0000H  | WRITECONSOLE . . . . | PROCEDURE EXTERNAL(8) STACK=0000H       | 185 250 254                                 |
| 22 0000H  | WRITELIST. . . . .   | PROCEDURE EXTERNAL(9) STACK=0000H       | 186                                         |
| 47 0000H  | WRITERECORD. . . . . | PROCEDURE BYTE EXTERNAL(18) STACK=0000H | 175                                         |
| 236 0000H | 1060 X. . . . .      | STRUCTURE BASED(PTR)                    | 237 238 239                                 |
| 226 0000H | 548 X. . . . .       | STRUCTURE BASED(PTR)                    | 227 229 231 232                             |
| 215 0000H | 548 X. . . . .       | STRUCTURE BASED(PTR)                    | 216 218 219 220 221 222                     |
| 200 0000H | 1060 X. . . . .      | STRUCTURE BASED(PTR)                    | 201 202 205 209 212                         |
| 181 0000H | 548 X. . . . .       | STRUCTURE BASED(PTR)                    | 182 188 189 194 195                         |
| 170 0000H | 548 X. . . . .       | STRUCTURE BASED(PTR)                    | 171 173 174 175 176                         |
| 140 0000H | 1060 X. . . . .      | STRUCTURE BASED(PTR)                    | 141 142 145 146 147 148 152 153 156         |
|           |                      |                                         | 165 166                                     |
| 117 0000H | 548 X. . . . .       | STRUCTURE BASED(POINT)                  | 118 119                                     |
| 105 0000H | 1 YES. . . . .       | BYTE EXTERNAL(38)                       |                                             |

## MODULE INFORMATION:

CODE AREA SIZE = 0650H 1616D  
 CONSTANT AREA SIZE = 000CH 12D  
 VARIABLE AREA SIZE = 0EC2H 3778D  
 MAXIMUM STACK SIZE = 0020H 32D  
 947 LINES READ  
 0 PROGRAM ERROR(S)

COPYRIGHT © 1981, 1982

DIGITAL RESEARCH

P. O. BOX 579

PACIFIC GROVE, CA 93950

SER. # \_\_\_\_\_



END OF PL/M-86 COMPILATION

COPYRIGHT © 1981, 1982

DIGITAL RESEARCH

P. O. BOX 579

PACIFIC GROVE, CA 93950

SER. # \_\_\_\_\_

